

CLAIMS

1. Method of determining the living character of an element (D) carrying a fingerprint and placed on a fingerprint sensor (1), the said method comprising a step of measuring an electrical quantity of the said element (D) and a step of determining the living character when the said electrical quantity measured belongs to a range of quantities judged acceptable, characterised in that it also comprises the following steps:

- the taking of an image (Ie) of the said fingerprint carried by the said element (D) by means of an optical system (SO) that the said sensor (1) has,
- measurement of a particular characteristic of the said image (Ie) and the deducing of a range of values from the said electrical quantity judged in principle acceptable using a relationship established between values of a particular characteristic of the said image (Ie) and ranges of values judged acceptable,
- validation of the value of the electrical quantity measured if this measurement is situated in the said range.

2. Method according to Claim 1, characterised in that the said particular characteristic is one of the following characteristics: the contrast of the image, the average greyscale of the image, the width of the images of the ridges formed by the said fingerprints, the average greyscale of the said ridges.

3. Method according to Claim 1 or 2, characterised in that the

said electrical quantity is the impedance whose value is measured at the terminals of electrodes that the said sensor (1) has.

4. Fingerprint sensor (1) making it possible to determine the living character of an element (D) carrying a fingerprint placed on the said sensor, the sensor comprising means of measuring an electrical quantity of the said element (D) and means of determining the living character when the said electrical quantity measured belongs to a range of values judged acceptable, characterised in that it also comprises:

- an optical system (SO) for taking an image (Ie) of the said fingerprint carried by the said element (D) and for measuring a particular characteristic of the said image (Ie) thus taken,
- means for establishing the relationship between values of a particular characteristic of the said image (Ie) and ranges of values judged acceptable,
- means of deducing a range of values of the said electrical quantity judged in principle acceptable from the particular characteristic measured,
- means of validating the value of the electrical quantity measured if this measurement is situated in the said range.

5. Sensor according to Claim 4, characterised in that the said optical system (SO) is provided for measuring one of the following characteristics of the said image (Ie) taken: the contrast of the image, the average greyscale of the image, the width of the images of the ridges formed by the said fingerprints, the average greyscale of the said ridges.

6. Sensor according to Claim 4 or 5, characterised in that the said means of measuring an electrical quantity are means of measuring impedance at the terminals of electrodes.

7. Sensor according to Claim 6, characterised in that the said electrodes ( $E_i, E_j$ ) are formed on a transparent plate (10), the said connections (20) to the said electrodes being conductive and also transparent.